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TITLE: NRC/AMRMC Resident Research Associateship Program

PRINCIPAL INVESTIGATOR: Dr. Michael Dubick

CONTRACTING ORGANIZATION: National Academy of Sciences
Washington, DC 20001

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6. AUTHOR(S)
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.National Academy of Sciences
500 – 5th Street, N.W.
Washington, DC 20001

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9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
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U.S. Army Medical Research and Materiel Command
U.S. Army Institute of Surgical Research
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14. ABSTRACT
During this reporting period, the NRC promoted research opportunities at AMRMC/AISR institutes through a broad outreach plan. A total of 5 applications were received during the period and of these, 5 were reviewed by NRC panels. 4 award offers were made and 4 accepted. A total of 6 Associates ended their tenure during the reporting period and of these 6 submitted final reports. The productivity of these Associates is listed in the technical report.

15. SUBJECT TERMS
Associateship program, post-doc, awards

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			USAMRMC
U	U	U	UU	16	19b. TELEPHONE NUMBER *(include area code)*

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

RESEARCH ASSOCIATESHIP PROGRAM

with

U.S. Army Institute of Surgical Research
U.S. Army Medical Research & Materiel Command

Annual Contract Technical Report

Contract No. W81XWH-12-2-0015
Contract Period: 03/01/2012-02/28/2018
Report Period: 05/01/2016-04/30/2017

During the reporting period, the National Academies of Sciences, Engineering, and Medicine (the Academies) NRC conducted the following activities in support of the subject contract:

Outreach and Promotion

The promotional schedule to advertise the NRC Research Associateship Programs included the following: 1) attendance at meetings of major scientific and engineering professional societies; 2) advertising in programs and career centers for these and other professional society meetings; 3) direct mailing and emailing of announcements and program materials to presidents, graduate deans, and heads of appropriate science and engineering departments and minority-affairs offices of all academic degree-granting institutions in the United States; 4) posting announcements on internet job sites, electronic newsletters and professional society websites; 5) print advertising in high profile publications (e.g., Science magazine, the Chronicle of Higher Education); and, 6) maintaining a presence on social media sites such as Facebook.

The Academies attended a number of minority focused events in which we maintained exhibit booths, participated in workshops and advertised in meeting literature, newsletters and websites or submitted materials for distribution. In addition, ads were placed in a variety of minority publications (e.g., Affirmative Action, Black Collegian).

In advertising the Research Opportunities available to prospective applicants, the Academies maintained an up-to-date listing of all active Research Advisers, current Adviser contact information and details of each Research Opportunity.

Processing and Review of Applications

Applications to the Research Associateship Programs were submitted via a web-based application system. Each application cycle opened two months prior to the application deadline. Academies staff provided support to prospective applicants including providing application instructions, technical support and additional information as requested.

A summary of applications for the reporting period is shown in Table 1.

For each applicant, the Academies received and processed an application form, a research proposal, transcripts, a statement of previous and current research, and confidential reference reports. An application file check was made prior to the review and each applicant was notified if required documents were missing.

The Academies convened panels in five broad discipline areas for the competitive review of applications in the NRC Research Associateship Programs. Results of the review were made available to Laboratory Program Representatives immediately following the conclusion of the each review.

A summary of the outcome of the review of applications for the reporting period is shown in Table 1.

Administration of Awards

The Academies made awards to applicants based on sponsor authorization. A summary of awards authorized and the acceptance or declination by the applicant during the current reporting period is shown in Table 1.

For NRC Research Associates beginning or continuing tenure, the Academies provided the administrative functions described in the contract Statement of Work. These functions included stipend payments,

management of a major medical benefits insurance program, and reimbursement for relocation and travel to professional meetings.

A summary of NRC Research Associates on tenure during the reporting period is shown in Table 2.

Outcomes Reporting

All NRC Research Associates who completed tenure were required to submit a final report that described the outcome of their Research Associateship award. Final reports received by the Academies during the current reporting period are attached to this technical report.

The activities of NRC Research Associates submitting final reports during this reporting period, including publications, presentations and patents, as well as an assessment of their experience in the program, are summarized in Table 3. Specific accomplishments of NRC Research Associates completing tenure during the reporting period are summarized in individual Final Reports (attached).

Table 1. Summary of applications and awards

Table 2. NRC Research Associates on tenure during the reporting period

Table 3. Activities of NRC Research Associates who completed tenure during the reporting period

Attachments: NRC Research Associates Final Reports, including Research Accomplishments and Scholarly Productivity

U.S. Army Medical Research & Materiel Command

Table 1: Summary of applications and awards

	May 2016	Aug 2016	Nov 2016	Feb 2017	Total
TOTAL APPLICATIONS	6	3	4	4	17
Applications not reviewed	0	0	0	1	1
Applications reviewed	6	3	4	3	16
Not recommended	0	0	0	0	0
Recommended	6	3	4	3	16
Withdrawn	0	0	0	0	0
Lab decision pending	0	0	0	1	1
Awards offered	6	3	4	2	15
Applicant decision pending	0	1	0	0	1
Awards accepted	5	2	4	2	13
Awards declined	1	0	0	0	1
Not funded	0	0	0	0	0

Table 2: NRC Research Associates on tenure during the reporting period

Associate	Adviser	Tenure Dates		Final Report
Research Institute of Medical Sciences, Bangkok				
Margulieux, Katie Rose	Swierczewski, Brett Edward	8/4/2016-8/3/2017		
U.S. Army Institute of Surgical Research				
Cheppudira, Bopaiah Pooviah	Christy, Robert John	9/4/2012-9/3/2017		
Greene, Whitney Ann	Wang, Heuy-Ching H.	4/25/2012-7/24/2017		
Holt, Andrew Whyte	Wang, Heuy-Ching H.	2/13/2017-2/12/2018		
Karna, Sai Lakshmi Rajasekhar	Leung, Kai P	4/1/2013-4/13/2017		Received
Nguyen, Jesse Quoc	Leung, Kai P	3/1/2017-2/28/2018		
Olekson, Melissa Ann	Leung, Kai P	9/2/2014-9/1/2016		Received
Parida, Bijaya Kumar	Dubick, Michael A.	3/19/2012-9/18/2016		Received
Penn, Alexander Hayes	Torres Filho, Ivo P	1/14/2015-1/13/2018		
Sosanya, Natasha	Christy, Robert John	4/20/2015-2/28/2018		
U.S. Army Medical Research Institute of Chemical Defense				
Beske, Phillip Howard	McNutt, Patrick Michael	8/29/2013-5/16/2017		
U.S. Army Medical Research Institute of Infectious Diseases				
Bachert, Beth Alexandra	Bozue, Joel A	1/3/2017-1/2/2018		
Bixler, Sandra Lynn	Goff, Arthur James	8/18/2014-11/25/2016		Received
Coate, Eric Allan	Bozue, Joel A	12/30/2015-12/29/2017		
Cohen, Courtney Alicia	Glass, Pamela J	7/28/2014-7/31/2016		Received
DeLaine-Elias, BreOnna C.	Palacios, Gustavo F	3/1/2017-2/28/2018		
Duy, Janice	Minogue, Timothy Devins	8/1/2013-7/31/2017		
Hollidge, Bradley Sherman	Schmaljohn, Connie	5/2/2016-2/28/2018		
Huse, Valerie	Minogue, Timothy Devins	9/29/2014-7/29/2016		Received
Kohler, Lara Juliette	Cote, Christopher Kevin	1/17/2017-1/16/2018		
Krishnamurthy, Malathy	Panchal, Rekha G.	10/5/2015-10/4/2017		
Maxson, Tucker	Minogue, Timothy Devins	2/1/2017-1/31/2018		
Mielech, Anna Maria	Ulrich, Robert Glenn	2/2/2016-2/1/2018		
Ricks, Keersten Michelle	Schoepp, Randal J.	12/7/2015-12/6/2017		
Shoemaker, Charles Jason	Schmaljohn, Connie	2/3/2014-2/2/2017		Received
Smith, Jessica L	Ulrich, Robert Glenn	6/24/2013-2/28/2018		
Stefan, Christopher Patrick	Minogue, Timothy Devins	1/2/2014-1/1/2018		
Stojadinovic, Marija	Panchal, Rekha G.	12/1/2014-11/30/2017		
Tursiella, Melissa Lynne	Schmaljohn, Connie	4/1/2014-1/31/2018		
Zeng, Xiankun	Sun, Mei Guo	5/4/2015-7/31/2016		Received
Walter Reed Army Institute of Research, Silver Spring				
Anderson, Margery Diane	Yourick, Debra Lynn	3/11/2014-2/28/2018		
Barasa, Sheila Ogoma	Mancuso, James D	5/5/2015-5/4/2017		
Brager, Allison J	Capaldi, Vincent F	7/18/2016-3/13/2017		Received
Crivat, Georgeta	Angov, Evelina	5/16/2016-5/15/2017		
DeDominicis, Kristen Elizabeth	Boutte, Angela M	9/8/2015-3/31/2017		Received
Kobylinski, Kevin Conrad	Davidson, Silas Andrew	10/17/2011-4/16/2017		Received
Kuehn, Emily Denise	Yourick, Debra Lynn	11/14/2016-11/13/2017		
Linton, Yvonne-Marie	Clark, Jeffrey William	10/3/2011-10/2/2016		Not Recv'd
McCracken, Michael Kevin	Jarman, Richard George	3/9/2015-2/28/2018		
McDermott, Emily Gray	Garver, Lindsey Susannah	1/9/2017-1/8/2018		
Pollett, Simon	Jarman, Richard George	6/27/2016-6/26/2017		
Simonelli, Guido	Capaldi, Vincent F	10/6/2014-10/5/2017		
Tenenbaum, Laura Subbiah	Yourick, Debra Lynn	6/3/2013-6/2/2017		
Zarling, Stasya Nicole	Krzych, Urszula	2/7/2011-5/15/2016		Received

Table 3: Activities of NRC Research Associates who completed tenure during the reporting period

13 Associates ended tenure during the report period
35 months was the average tenure length
66 months was the longest
8 months was the shortest
12 submitted final reports

In the final reports, Associates indicated the following scholarly activity while on tenure.

62 Articles published in refereed journals
16 Articles other (Proceedings, Book Chapters, other)
41 Domestic presentations
15 International presentations
0 Patent applications
9 Awards

After ending their tenure, Associates indicated their future plans as follows:

0 Permanent position at the NRC host agency
8 Contract or temporary position at the NRC host agency
1 Research/administrative position with another U.S. government agency
0 Research/administrative position with foreign government agency
0 Research/teaching at US college/university
0 Research/teaching position at a foreign college or university
0 Research/administrative position in private industry in the U.S.
0 Research/administrative position in private industry outside of the U.S.
1 Research/administrative position with a non-profit
0 Self-employed/consulting
0 Postdoctoral Research
1 Other
1 No information provided

In their final reports, Associates were asked to evaluate certain aspects of their experiences on a scale of 1 (low) to 10 (high). The average rating for each item follows:

9.8 Short-term value (lab)-Development of knowledge, skills, and research productivity at lab
9.7 Long-term value (career)-How your Research Associateship affected your career to date
9.7 Laboratory Support-Equipment, funding, orientation, safety & health training, etc.
9.4 Adviser Mentoring-Quality of mentoring from the Research Adviser
9.5 LPR Support-Quality of administrative support from the LPR
9.9 NRC Support-Quality of administrative support from the NRC

Attachments

Associates Final Reports, including Research Accomplishments and Scholarly Productivity, follow.

NRC RESEARCH ASSOCIATESHIP PROGRAM ASSOICATE FINAL REPORT

Associate: Karna, Sai Lakshmi Rajasekhar
Program: AMRMC - U.S. Army Medical Research & Materiel Command
U.S. Army Institute of Surgical Research
US Army Institute of Surgical Research
Fort Sam Houston, TX 78234-6315
Opportunity: B7471/Biofilms Impaired Wound Healing
Adviser: Leung, Kai P

Research Proposal: The Role of sRNAS of Pseudomonas Aeruginosa in Single Species and Polymicrobial Biofilms
Tenure Dates: 04/01/2013-04/13/2017

RESEARCH ACCOMPLISHMENTS

A)Successfully 1) established our biofilm animal model, 2) characterized the wounds for Bacteria counts (viable counts and total cell counts-qPCR), Biofilm morphology (SEM),
Measurement of PMNs and macrophages infiltration (IHC)and
Epithelialization (histomorphometry, 3) sequenced the transcriptomes (RNA-seq) of both bacteria and host, 4) analysis of the host transcriptome data was complete and identified a unique set of ncRNAs that play a key role in regulating changes between the cell states from a metabolically suppressed state of inflammation to the proliferation state phase of wound healing.

B) The bacterial transcriptomic data supports our original hypothesis in identifying the key genes of that might help in adapting Pseudomonas aeruginosa from planktonic to biofilm phenotype. These genes are part of alginate biosynthesis pathway, catalases, and transporters and also significant numbers of them were identified as hypothetical. The results we found until now suggested that we are in correct path to identify the pivotal pathways for P. aeruginosa to actively infect and establish biofilm infections. This study generates vast data on P. aeruginosa adaptations to the wound niche and also on host responses towards the infection. This data will be available to the research community for furthering investigation to prevent/treat P. aeruginosa wound infections.

C)Successfully sequenced the genome of virulent P. aeruginosa strain, 12-4-4(59), isolated from blood culture of a burn patient and published in ASM journal of Genome announcement.

D)Successfully sequenced the whole-genome of multidrug-resistant P. aeruginosa strain BAMCPA07-48, isolated from a combat injury wound and published in ASM journal of Genome announcement.

SCHOLARLY PRODUCTIVITY

ARTICLES - PEER REVIEWED

Karna, S. L. Rajasekhar; Chen, Tsute ; Chen, Ping; Peacock, Trent J; Abercrombie, Johnathan J; Leung, Kai P. , 2016, Genome Sequence of a Virulent Pseudomonas aeruginosa Strain, 12-4-4(59), Isolated from the Blood Culture of a Burn Patient, Genome Announc. 2016 Mar-Apr; 4(2): e00079-16.
Karna, S. L. Rajasekhar; D'Arpa, Peter; Chen, Tsute ; Qian, Li-Wu; Fourcaudot, Andrea B; Yamane, Kazuyoshi; Chen, Ping; Abercrombie, Johnathan J; You, Tao; Leung, Kai P, 2016, RNA-Seq Transcriptomic Responses of Full-Thickness Dermal Excision Wounds to Pseudomonas aeruginosa Acute and Biofilm Infection, PLoS One. 2016; 11(10): e0165312.
Fatemeh, Sanjar; Karna, S. L. Rajasekhar; Chen, Tsute; Chen, Ping;Abercrombie, Johnathan J; Leung, Kai P , 2016, Whole-Genome Sequence of Multidrug-Resistant Pseudomonas aeruginosa Strain BAMCPA07-48, Isolated from a Combat Injury Wound, Genome Announc. 2016 Jul-Aug; 4(4): e00547-16.
Miller, Christine L; Romero, Manuel; Karna, S. L. Rajasekhar; Chen, Tsute;Heeb, Stephan; Leung, Kai P, 2016, RsmW, Pseudomonas aeruginosa small non-coding RsmA-binding RNA upregulated in biofilm versus planktonic growth conditions, BMC Microbiol. 2016; 16: 155.
Miller, Christine L; VanLaar, Tricia A;Chen, Tsute;Karna, S. L. Rajasekhar;Chen, Ping;You, Tao; Leung, Kai P, 2016, Global transcriptome responses including small RNAs during mixed-species interactions with methicillin-resistant Staphylococcus aureus and Pseudomonas aeruginosa., Microbiologyopen. 2016 Nov 21. doi: 10.1002/mbo3.427

ARTICLES - OTHER (PROCEEDINGS, BOOK CHAPTERS, OTHER)

PRESENTATIONS - DOMESTIC

Karna, S. L. Rajasekhar; D'Arpa, Peter; Chen, Tsute ; Qian, Li-Wu; Fourcaudot, Andrea B; Yamane, Kazuyoshi; Chen, Ping;

Abercrombie, Johnathan J; You, Tao; Leung, Kai P, 09/21/2016, RNA-Seq Transcriptomic Responses of Full-thickness Dermal Excision Wounds to Pseudomonas aeruginosa Acute and Biofilm Infection , 4th Annual San Antonio Postdoctoral Research Forum 2016, San Antonio, TX, USA
Karna, S. L. Rajasekhar; D'Arpa, Peter; Chen, Tsute ; Qian, Li-Wu; Fourcaudot, Andrea B; Yamane, Kazuyoshi; Chen, Ping; Abercrombie, Johnathan J; You, Tao; Leung, Kai P, 04/16/2016, Host Genomic Responses to Pseudomonas aeruginosa Wound Infections, Wound Healing Society Annual meeting 2016, Atlanta,GA,USA
Karna, S. L. Rajasekhar; D'Arpa, Peter; Chen, Tsute ; Qian, Li-Wu; Fourcaudot, Andrea B; Yamane, Kazuyoshi; Chen, Ping; Abercrombie, Johnathan J; You, Tao; Leung, Kai P, 10/28/2015, Genomic Responses of Pseudomonas aeruginosa in Wounds, American Society for Microbiology conference on Biofilms 2015, Chicago, IL, USA
Karna, S. L. Rajasekhar; D'Arpa, Peter; Chen, Tsute ; Qian, Li-Wu; Fourcaudot, Andrea B; Yamane, Kazuyoshi; Chen, Ping; Abercrombie, Johnathan J; You, Tao; Leung, Kai P, 09/15/2015, Genomic Responses of Pseudomonas aeruginosa in Wounds, 3rd Annual San Antonio Postdoctoral Research Forum 2015, San Antonio, TX, USA

PRESENTATIONS - INTERNATIONAL

PATENTS

AWARDS

The National Academies of
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NRC Research Associateship Programs

FINAL REPORT

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Olekson	**Melissa**	**A**

2) *FORWARDING Address* **(to which your tax statement will be mailed)**	*FORWARDING Phone(s) and E-Mail* **(if known)**
Residence or Institution	**Home Phone:** **Alt. Phone:** **Preferred E-mail:**

3) *Today's Date*	*Dates of Tenure*
August 24, 2016	from **September 2, 2014** to **September 1, 2016**

4) *Host Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**US AISR**	**DTRD**
(e.g., AFRL)	**(e.g., Wright Patterson AFB)**	**(e.g., High-Speed Propulsion)**

5) *Name of Laboratory Adviser* **(and USMA Mentor, if applicable)**

Dr. Kai P Leung

6) *TITLE OF RESEARCH PROPOSAL*

High-throughput in vitro evaluation of stable anti-biofilm agents that promote wound healing

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Some antimicrobial peptide (AMP) mimics, ceragenins, inhibit bacterial cell viability, decrease matrix production, and impact cell diameter in a mixed species biofilm.**

2) **Some ceragenins improve keratinocyte wound healing in vitro at low concentrations (~10ng/mL). Some ceragenins also induce endothelial cell tube formation in vitro. For one ceragenin, CSA-13, VEGFR2 signaling mechanisms appear to be activated.**

3) **AMP dermaseptin S1(DRS1) has a higher affinity for artificial bacterial membranes than mammalian membranes. Utilizing a surfactant with DRS1 improves its antibiofilm activity than DRS1 alone. DRS1 improves wound healing and tube formation in vitro.**

4) **Replacing amino acids in some peptides with D-amino acids leads to improved antibacterial and anti-biofilm activity.**

5) **Using ultra-high doses of gentamicin in vitro leads to decreased tube formation through upregulation of the anti-angiogenics gene CXCL10. Similar treatments in macrophages also increased CXCL10 and pro-inflammatory cytokine expression.**

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The benchwork for my projects has been completed. We are waiting on reviews from the submitted publications and I plan to submit the dermaseptin publication in the weeks following the completion of my NRC fellowship.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Olekson, MA; You, T; Savage, PB; Leung, KP. "Anti-biofilm ceragenin peptide-mimics induce wound healing functions in vitro". Submitted to J Applied Microbiology June 2016.

Olekson, MA; Rose, LF; Carlsson, AH; Fletcher JL; Leung, KP; Chan, RK. "Ultrahigh dose gentamicin alters inflammation and angiogenesis in vivo and in vitro". Submitted to Angiogenesis August 2016.

Olekson, MA; Karna, SLR; Leung, KP. "Evaluation of dermaseptin S1 (DRS1) and DRS1-derived peptides for antimicrobial activity and wound healing in vitro". In preparation for submission to Peptides in September 2016.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

7th ASM Conference on Biofilms, Chicago, IL, October 2015
Poster "High-throughput in vitro evaulation of anti-biofilm treatments that promote wound healing

28th Annual Southern Regional Burn Conference, Dallas, TX, November 2015
Oral Presentation - "High dose gentamicin modulates the angiogenesis-related genes and phenotypes both in vitro and in vivo"

Wound Healing Society Annual Meeting, Atlanta, GA, April 2016
Oral Presentation - "Anti-biofilm peptides and peptide-mimics stimulate wound healing processes in vitro

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

3rd Place, Fellow/Resident Oral Presentation, Southern Regional Burn Conference, 2015

14) *POST-TENURE POSITION / JOB TITLE*

N/A yet - I am currently applying to jobs in industry,

15) *NAME AND ADDRESS OF POST-TENURE POSITION / JOB 0RGANIZATION*

N/A

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Permanent position at the host agency
- ☐ Contract or temporary position at the host Agency
  Abbreviate Host Laboratory/Center ____
- ☐ Research/Administrative position with another U.S.-government agency
- ☐ Research/Administrative position with a foreign-government agency
- ☐ Research/teaching position at a U.S. college or university
- ☐ Research/teaching position at a foreign college or university
- ☐ Research/administration position in private industry in the U.S.
- ☐ Research/administration position in private industry outside of the U.S.
- ☐ Research/administration position with a non profit
- ☐ Self-employed/consulting
- ☐ Postdoctoral research
- ☐ Other **(Please specify, possible)** ____
- ☒ No information provided

17) (For J-1 visa holders only) *SUMMARY OF CULTURAL AND EDUCATIONAL EXCHANGE DURING TENURE* **Itemize experiences that your laboratory (LPR and/or Adviser) has offered to you that facilitated your learning about American culture. Also itemize what you have done to share your culture with your colleagues and the community.**

1)

2)

3)

4)

5)

18) *APPRAISAL OF NRC RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

9 Development of knowledge, skills, and research productivity

Comments

The acquisition of new knowledge and skills during my time as an NRC fellow was very beneficial. Not only did I have the chance to sharpen my ability to create and perform cell-based assays, but I was also able to obtain a completely new skill set in microbiology (bacteria/biofilm culture) and PCR/gene expression analysis. Being in a research center so closely related to the burn clinic allowed me to gain even more knowledge on wound healing and models for human wounds.

LONG TERM VALUE

8 How the NRC Research Associateship award affected your career to date

Comments

I am currently in a transition between my fellowship and my next position, which I hope will be in industry, but I do think my training here will be instrumental in my career going forward.

LAB SUPPORT

10 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.

Comments

The Leung laboratory has state-of-the-art facilities, and the laboratory has supported my project in terms of supplies and funding since I first started my fellowship. I was embraced as part of the team. The US AISR also has very strict and up-to-date health and safety regulations.

ADVISER/MENTOR SUPPORT

9 Quality of mentoring from the Laboratory Adviser (USMA Mentor, if applicable)

Comments

It was a privilege to work for Dr. Leung for two years. As a PI, he is very enthusiastic about all areas of research in his laboratory. He is very accessible and always stayed engaged in my projects over the course of my fellowship. He does everything possible to help the project be a success by providing advice, funding, and contacts to potential collaborators.

LPR SUPPORT

8 Quality of administrative support from the Laboratory Program Representative (LPR)

Comments

Dr. Dubick was very friendly and helpful in providing support for NRC travel and award renewals.

NRC RESEARCH ASSOCIATESHIP PROGRAMS SUPPORT

10 Quality of administrative support. Please assess the support you received from the Fellowships Office (e.g., moving company, insurance, Omega, payroll, Program Coordinator, travel, etc.)

Comments

The quality of administrative support I received from the NRC program was excellent. Peggy and everyone in travel, payroll, and insurance that I dealt with responded prompty and were very friendly and knowledgeable. I especially want to point out Peggy who was such an immense help while transitioning into the program and also answering any questions that came up during my tenure as an NRC fellow. I really enjoyed being a part of this program.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Please do NOT scan to PDF. Send the Final Report as MSWord document via e-mail to your Program Coordinator

No handwritten signature required; but you may upload a scanned signature file below:

Leah Probst: lprobst@nas.edu
Linda Sligh: lsligh@nas.edu
Melanie Suydam: msuydam@nas.edu
Peggy Wilson: pwilson@nas.edu

NRC RESEARCH ASSOCIATESHIP PROGRAM ASSOICATE FINAL REPORT

Associate: Parida, Bijaya Kumar
Program: AMRMC - U.S. Army Medical Research & Materiel Command
U.S. Army Institute of Surgical Research
US Army Institute of Surgical Research
Fort Sam Houston, TX 78234-6315
Opportunity: B4676/Hemostatic Function in Trauma
Adviser: Dubick, Michael A.
Research Proposal: Studies into the Relationship Between Microparticles and Trauma-induced Inflammation and Coagulopathy
Tenure Dates: 03/19/2012-09/18/2016

RESEARCH ACCOMPLISHMENTS

1. Characterization of cell-derived microparticles in plasma of trauma patients.
2. Evaluation of silica beads and its comparison to polystyrene beads as microparticle standards
3. A prospective study of the immunoinflammatory profiles of trauma and burn patients.
4. Evaluation of various pre-analytical and analytical conditions for microparticle analysis.
5.Participated in various collaborative projects within the department, institute and outside collaborators. Results from these projects were submitted as abstracts to scientific meetings.

SCHOLARLY PRODUCTIVITY

ARTICLES - PEER REVIEWED

Parida, BK; McFaul,SJ; Cap, AP, 2016, Evaluation of liquid cold storage of platelet poor plasma for microparticle analysis,
Parida, BK; Meyer, ADJ; Aden, JK; Montgomery, RK; Garrastazu, H; Scherer, MR; Prat, N; McFaul, SJ; Pidcoke, HF; Cap, AP, 2016, Challenges in microvesicle analysis of clinical samples and optimization of methods,
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